

ABSTRACT

Microbial Fuel Cell is one of the promising sources for renewable energy, it is also the utilization of energy from biomass that becomes a solution to the utilization of biomass energy. MFC uses microorganisms as a source to generate its electric current by reducing oxidation. In the study, Tubular MFC aims to prove the MFC system is able to work with tubular form, as well as optimize the durability of MFC, also produce optimal electrical energy by varying the size of the salt bridge mixture. Variations in the size of the salt bridge mixture aimed at building proton displacement solutions can occur optimally so that potential differences can affect the optimal power output. The construction of tubular MFC consists of substrate compartments that have anodes made of zinc and then coated by a salt bridge cylinder made of NaCl mixed cement. Salt bridges are integrated into the system permanently so that in retrieving data variations of salt bridges, researchers created 3 identical reactors with different sizes of salt bridge materials. Once the system is complete, the output data will be read by the sensor or using a multimeter. The power emitted by the system for seven days reached 1.39 mW for reactor I, 0.3 mW for reactor II, and 0.12 mW for reactor III.

Keywords: Salt bridge, rice field mud, Microbial Fuel Cell, Tubular.